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# PROMOTING STUDENT ENTERPRISE: REFLECTIONS ON A UNIVERSITY START-UP PROGRAMME

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**Abstract.** Universities now see the promotion of student and graduate start-ups as a key part of their role. This has two strands: (i) incorporating entrepreneurship education into the curriculum, and (ii) activities and infrastructure to support and accelerate the start-up process. There is now a substantial literature on the design, content, delivery and impact of entrepreneurship education. In contrast, little attention has been given to these issues in the context of student business start-up programmes. This paper describes and reflects on the outcomes of an ongoing small-scale start-up programme – the Santander Summer Company Programme at the University of Glasgow and offers a number of observations on the objectives, design and evaluation of such programmes. A key conclusion is that such programmes require to be part of a broader university entrepreneurial ecosystem and embedded within the wider local, regional and national entrepreneurial ecosystems.

**Key words:** universities, economic development, student enterprise; start-up programmes, entrepreneurial ecosystems

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## 1. INTRODUCTION

There is an expectation that universities should contribute to local, regional and national economic development beyond their educational role. Traditionally, this wider economic impact has been largely confined to the commercialization of research – primarily in computer science, engineering and life sciences - through the licensing of IP to businesses and to their own spin-off companies. Within the past two decades universities have extended their activities to include the promotion of entrepreneurship amongst students and recent graduates. This ‘entrepreneurship turn’ comprises two strands (Mason, 2014). The primary focus has been pedagogic – building

entrepreneurship courses into the curriculum, primarily in business schools but now extending into other disciplines, to develop entrepreneurial mindsets and create entrepreneurial intention across the student population (Kuratko and Morris, 2018). The second, and less developed, strand is extra-curricular learning activities, such as entrepreneurship clubs, business plan competitions and bootcamps. These activities engage with a much broader range of faculties and departments than those involved in traditional university commercialization activities (Duruflé et al, 2018) and are less likely to be based on academic research (Manian and Everett, 2017). However, there is now a recognition that these activities need to be complemented by programmes that support students with entrepreneurial intent to start their own businesses.

The key drivers of this shift in focus are threefold. First is pressure from governments for universities to develop their economic role by supporting innovation and enterprise. Second is the emphasis on enhancing student employability. It is increasingly recognized that conventional teaching is not sufficient for students to develop the competences that are sought in the employment market (Arif et al, 2019). Moreover, students need to be able to manage their own careers in a world of increasing occupational, job and contract change that is characterized by project working and short term assignments, with the consequence that “whether or not you are employed in what we used to call a job, you are henceforth in business for yourself” (Bridges, 1995: 61). Third, there is increased interest amongst Generation Z in pursuing entrepreneurial careers (Octopus Group, 2019). This focus on student start-ups is consistent with evidence that the number of ventures started by students and graduates far outweighs those created by faculty members (Åstebro et al, 2012; Manian and Everett, 2017).

Although there is now a substantial literature on the design, content, delivery and, to a lesser extent, impact of entrepreneurship education, little attention has been given to these issues in the context of student business start-up programmes in universities. In this paper we reflect on the outcomes of an ongoing small-scale start-up programme – the Santander Summer Company Programme at the University of Glasgow.<sup>1</sup> We offer some insights that have wider implications concerning the objectives of such programmes, their design, measurement of ‘success’, and the role of the wider university and local/regional entrepreneurial ecosystems.

## 2. PROMOTING STUDENT START-UPS

The start-up process for student and graduate entrepreneurs has been identified as comprising three stages (Duruflé et al, 2018):

- Inspire – creating entrepreneurial mind-sets and entrepreneurial intentions.
- Engage – experiential learning to develop their entrepreneurial skills and know-how and shape their business idea.
- Accelerate – building the venture.

Entrepreneurship education has been the main emphasis of university efforts to promote student and graduate enterprise – the ‘inspire’ stage. Indeed, entrepreneurship education is now a distinct

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<sup>1</sup> These reflections are based on the experiences of the authors in engaging with the programme in a variety of roles. Mason identified the programme when he held a visiting position at University of Ottawa and proposed to the Student Enterprise Manager that it should be implemented at the University of Glasgow and has had an ongoing involvement since it was implemented. Anderson is the current Student Enterprise Manager who has built up the programme from its second year. Kessl and Hruskova have both worked with the Student Enterprise Office as interns on the delivery of entrepreneurship activities. Kessl undertook interviews with past participants in the programme which the paper draws on. Hruskova worked as Scottish Institute for Enterprise intern and is currently undertaking a PhD on entrepreneurial ecosystems and is founder of the University of Glasgow’s StartUp Grind chapter (<https://www.startupgrind.com/university-of-glasgow/>).

domain, with universities around the globe offering a wide range of academic programmes in entrepreneurship (Morris et al, 2013; Mazzarol et al, 2016). However, there is considerable scepticism that entrepreneurship courses have a positive impact on business start-up activity (e.g. Jones, 2010; Mazzarol et al, 2016), with many studies suggesting that they have no effect on students' entrepreneurial intentions or self-assessment of their entrepreneurial skills (e.g. Cooper and Lucas, 2004; Oosterbeck et al, 2010; Nabi et al, 2018), especially if self-selection effects are taken into account (Bae et al, 2014). This is attributed by some to the concentration of entrepreneurship teaching in business schools whose teaching model has been questioned as an appropriate way to teach entrepreneurs (Mazzarol et al, 2016). Others highlight the traditional design and delivery of such courses, and their emphasis on teaching 'about' entrepreneurship with a heavy theoretical content. Moreover, the objective of many entrepreneurship courses is to instil an entrepreneurial mind-set rather than teaching the principles and tools necessary to start a business (Kuratko and Morris, 2018). How students are initially exposed to entrepreneurship is significant (Hayter et al, 2017). Piperopoulos and Dimov (2015) note that the nature of the teaching context has an important mediating effect on the impact of entrepreneurship teaching, with theory-based courses having no effect on entrepreneurial intentions. In contrast, courses based on experiential learning have been shown to have a positive effect on opportunity recognition and identification (Costa et al, 2018).

The clear implication is that a reliance on pedagogic activities – incorporating entrepreneurship education into the curriculum – is not sufficient to enable universities to achieve their objective of generating local start-ups, and thereby contribute to local and regional economic development. Few courses succeed in their objective of 'inspiring' students to become entrepreneurs nor are

they designed to follow through with support for those students who do ‘engage’ in the business start-up process. Students need to be exposed to multiple experiences that go beyond curricular programmes to enable them generate viable business ideas and equip them with the tools for the start-up process (Morris et al, 2017). Universities therefore require to put practically-oriented student start-up programmes at the core of their efforts to promote student and graduate entrepreneurial activity.

There is considerable variety in the way in which student start-up programmes are designed and delivered. Nevertheless, they have a number of common features. Students who participate in such programmes are likely to have a high degree of intentionality to start their own business (which may have been developed in entrepreneurship courses) and have a business idea (one of the main objectives of the programme being to refine and enhance the idea), and the time-lag between completing the programme and starting the business will be short. Start-up programmes are also more likely to have a positive local economic impact as a consequence of the networks that the participants develop through the programme which is likely to embed them in the local entrepreneurial ecosystem, reducing the likelihood that they will base their start-up in another location. Evidence from Sweden indicates that the majority of graduates who start businesses within three years of graduating do so in the region in which they attended university (Larsson et al, 2017).<sup>2</sup> However, because much of the support provided on start-up programmes is delivered on a one-to-one basis they are extremely resource intensive and hence typically operate on a small scale.

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<sup>2</sup> However, this effect was strongest in major metropolitan area of Stockholm

The remainder of the paper reflects on the experience of one student start-up programme. It raises a number of issues which have wider relevance to universities that are considering developing their own programmes or seeking to enhance the effectiveness of their existing programmes.

### 3. THE UNIVERSITY OF GLASGOW'S SANTANDAR SUMMER COMPANY PROGRAMME (SSCP)

The inspiration for the SSCP was a long-established summer company scheme operated by the Canadian province of Ontario that is designed to raise entrepreneurial awareness amongst school leavers and university students (ages 15-29). It supports students to set up their own businesses in the summer months through a grant of \$3,000 along with a minimum of 12 hours of training and hands-on coaching and mentoring. The programme is delivered by the Province's Small Business Enterprise Centres and selected community-based non-profit organisations.<sup>3</sup> Students attending school or university and returning as full-time students in the following autumn are eligible.<sup>4</sup>

The University of Glasgow's scheme is similar in its design. With the financial support of the Santander Bank it provides a 12 week package of financial and on-demand mentoring for University of Glasgow students to support the start-up process. Participants can be individuals or teams. In detail, the programme, which starts in June each year, provides a £2,500 grant per business to cover start-up expenses (participants are provided with a list of qualifying expenses), free desk space in the University's hatchery, along with a package of business advice, mentoring,

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<sup>3</sup> Some other Canadian provinces – e.g. Newfoundland and Labrador – have similar programmes.

<sup>4</sup> <https://www.ontario.ca/page/summer-company-program-guidelines#section-0>

and training workshops<sup>5</sup> that are delivered through a combination of in-house resources and resources drawn from the wider ecosystem. Other elements comprise mentoring, pitching support, participation in external events (e.g. a Scottish Institute for Enterprise (SIE) bootcamp), introductions to appropriate networks, including alumni, links to external sources of business support (e.g. Business Gateway), and help with making applications to competitions and funding programmes (e.g. Converge Challenge, Scottish EDGE). Programme participants have on-going access the Student Enterprise Manager for advice on an as-needed basis. They also receive membership of the Glasgow Chamber of Commerce for one year and access to Santander banking support. The package of support has evolved over time in response to participant demand and feedback. Participants are required to produce a monthly progress report to the Student Enterprise Manager and business records as required by the Companies Act. Limited companies, partnerships, sole traders and social enterprises are all eligible; franchisees, distributorships and commissioned sales persons are not. A key difference from the Canadian scheme was the early decision that newly graduated students as well as continuing students are eligible. Participants make a presentation to the panel at the end of the 12 week programme on the progress that they have made and their future plans.

The programme has run each year since 2014, with three participants in the 2014 cohort and four individual entrepreneurs or teams supported in each subsequent annual cohort. The main source of applicants are students who have approached the University Enterprise Manager during the academic year to receive coaching to refine their business idea. Since 2018 a further pipeline has

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<sup>5</sup> Topics include design thinking and ideation, the business model canvas, branding, sales, intellectual property, GDPR, doing business online, social media, legal issues, accountancy and tax, approaching investors, mindfulness and building resilience.



been the *StartUp Factory*, organised by the Adam Smith Business School, the School of Computing Science and the Glasgow School of Art, and the students' Entrepreneurship Society and Tech Society. This is a weekend event at which student teams, with the support of mentors (academics and professionals from the wider ecosystem), develop their business ideas and pitch them to a panel of judges.<sup>6</sup> Each year there has been interest from, on average, 16 embryonic businesses, of which around eight are selected by the Enterprise Manager to present to a panel on the basis of how well developed is their business idea, their ability to take their idea forward and their capacity to benefit from the programme. The panel make the decision which four individuals/teams to accept on to the programme.

The six cohorts (2014-19) have included 12 individuals and 11 teams.<sup>7</sup> Seven of the individual participants were male and five were female. Of the team participants, seven were all male, one was all female and three were mixed. The successful applicants have included undergraduate, Masters and PhD students, with Masters students being the largest category. They have included both continuing students and completing students. Of the 43 students that have participated, 20 were UK nationals, 20 were EU nationals and 3 were international students. Participants were at various stages in the development of their business ideas and differed in their business experience.

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<sup>6</sup> See [https://www.gla.ac.uk/myglasgow/news/peopleprojects/headline\\_627357\\_en.html](https://www.gla.ac.uk/myglasgow/news/peopleprojects/headline_627357_en.html)

<sup>7</sup> One of the teams comprised three students from the University of Glasgow and one from another (local) university. In the context of our later discussion of competing claims for ownership of successful start-ups, it can be noted that because of this the other university claimed the business as one of its successes.

All of the businesses were at the pre-start-up stage when they joined the programme. This reflects the intention of the programme which is to support the businesses as they move along the start-up runway (e.g. market testing, prototype development). The business ideas have been diverse. There is a bias to tech, especially digital apps, but have also included consumer products and services (e.g. gin distillery, micro-brewery, walking tours) and a social enterprise.

#### 4. REFLECTIONS

##### 4.1. Outcomes

The most obvious way to measure of the effect of a scheme such as the SSCP is in terms of entrepreneurial outcomes, specifically the number of start-ups that have resulted. On this basis the outcome is highly skewed. Both the 2015 and 2016 cohorts each produced one very successful business which have both gone on to win various awards and subsequently raised external finance. However, this is offset by fact that the three other businesses in the 2015 cohort and two from the 2016 cohort are dormant. One of the businesses in the 2017 cohort, a gin distillery, has achieved significant traction. The three other businesses are also trading but in two cases on a part-time basis. Three of the businesses in the 2018 cohort are currently trading, with the fourth business not yet at the launch stage. Here again, this cohort contains one very successful start-up whose founder was awarded a Royal Society of Edinburgh Unlocking Ambition Enterprise Fellowship, a year-long programme of funding (£45,000), training, mentorship and academic support funded by the Scottish Government, and in 2019 raised £400,000 from a consortium of European early stage investors.<sup>8</sup>

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<sup>8</sup> <https://www.sciencescotland.org/feature.php?id=358>

The lesson to be drawn from this evidence is that the majority of the participants on start-up programmes will either be ‘strike-outs’ or will achieve modest success: only a minority will be ‘home runs’, but they have the potential to generate significant economic benefits.

#### 4.2. Impacts

Focusing just on venture creation is too narrow a perspective to judge the outcome of the programme. It is more appropriate to assess the programme in terms of its wider impacts on the participants, although the nature of these impacts is subjective and intangible. Participants identified a variety of benefits that they have derived from the programme.

Several participants reported that the programme gave them the personal confirmation that entrepreneurship was what they wanted to do. One participant reported that the programme *“reinforced my belief that I wanted to be an entrepreneur.”* For another participant, *“it reinforced my ambition to be an entrepreneur.”* And another participant commented that the programme *“reaffirmed my belief that entrepreneurship was what I wanted to do”*.

A number of participants commented that a key benefit from the programme was that it gave validation of their business idea. Knowing that other people believed in their idea gave them confidence. This, in turn, was an important motivator which increased their commitment. Some participants reported that the programme has ‘jump started’ their business. One commented as follows:

*“The summer programme was tremendously beneficial taking me from a one-man band working part-time from my flat to a business with an office. The start-up capital enabled*

*me to take on an intern and to make concrete goals. That step is crucial. It causes a shift in the mentality and the business stops being something you're just tinkering with and becomes a solid place of work you're responsible for. That really increased my productivity."*

Other participants made comments in similar vein:

- *"the programme enabled me to develop and showcase a prototype",*
- *"it pushed it over the threshold to become a 'real business'"*
- *"I was able to work full time on the business"*
- *"I could focus on getting the product out and reaching first users."*

Turning to the specific components of the programme, the finance that participants received was important. One participant used it to pay for software development while another used it for marketing, membership fees, website, advertising and branded jackets. But some of the participants commented that how to spend this money was a challenge – even a burden – as they had never had this amount of money to manage and had no idea of the cost of particular items.

However, the significance of the programme extended well beyond finance. The space in the hatchery was also emphasised as a benefit. This had several dimensions. Some indicated that it was an important source of motivation. It was also identified as providing a signal to potential stakeholders of commitment. For others its importance was that it provided a stable place in which to work, enabled them to develop a working routine and separate work and personal life. Some noted that the benefit of office space enabled the team to meet on a regular basis. There were also important peer-learning and cohort-learning effects, with participants reporting

benefits from the conversations that they were able to have with other start-up entrepreneurs in the hatchery space.

Participants also identified learning and personal development benefits from the programme.

One commented that *“experiencing what running a business actually meant was the most valuable part of the programme.”* Another commented that the programme *“was a great learning experience, teaching me about accounting, business strategy and pitching.”* Other examples of learning included how to manage people, the need to focus on execution rather than vision, and developing online marketing skills.

Some participants also highlighted networking benefits to the wider entrepreneurial community.

These included connections to potential investors, advisers and mentors and other entrepreneurs.

For example, one participant reported that *“the summer company programme put me in touch with professionals who were excited to help me establish myself in [the] industry.”*

Most participants reported positively on the workshops. They were commended for their practical insights and positive motivational and psychological effects. Participants linked these positive impacts to the involvement of experienced entrepreneurs in the delivery of the various sessions. However, one participant – whose business idea was already fairly well developed – was critical of the workshops for focusing the content on entrepreneurs at a very early stage in the process.

#### 4.3 Measuring success

It follows that appropriate metrics to measure the success of programmes such as the SSCP should be focused on the individuals participating in the programme and their subsequent entrepreneurial activities rather than on the narrowly-focused, short-term measure of the number of businesses started. Positive outcomes arise even if a participant's business did not succeed. Some participants go on to start another business. Two solo entrepreneurs in the 2015 cohort whose businesses are no longer active have each gone on to start another business. Both acknowledged that the programme had been beneficial even though their businesses failed to gain commercial traction. Crucially, they each identified that the experience had reinforced their belief that they wanted to be entrepreneurs. One of these entrepreneurs was selected for the 2017 cohort with a new business idea for a lawnmower robot based on his Master of Engineering dissertation and internship experience. As noted earlier, he was awarded a Royal Society of Edinburgh Unlocking Ambition Enterprise Fellowship, and subsequently raised £400,000 from investors. He acknowledged learning from the failure of his earlier business: *"we shipped it without having spoken to enough users, and then discovered more than 30 rival companies were developing similar products."* Before finalising the design of his lawnmower robot he talked to numerous homeowners, retailers, golf courses and city councils in various countries to research his idea, asking them all what that they like and don't like in similar products.<sup>9</sup> Some founding teams break-up, thereby generating multiple impacts. For example, one of the founders of one business subsequently left the team and now works in a business accelerator (in another city) supporting other start-ups.

#### 4.4 Start-up programmes need to be embedded in the wider entrepreneurial ecosystem.

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<sup>9</sup> See footnote 9

Start-up programmes need to be integrated into the wider entrepreneurial ecosystem. They need to draw upon resources both to deliver the programme content (e.g. presenters, mentors, coaches, networking events) and to support the ‘accelerate’ stage of the start-up process by linking businesses that have completed the programme to additional resources from various entrepreneurial support organisations both in the local ecosystem and beyond, including competitions, accelerator programmes, incubators, and sources of funding (grants, business angels, venture capital funds) (Wright et al, 2017). Typically, each of the SSCP participants has received mentorship, training and business support from the Scottish Institute for Enterprise, been helped to connect with the local ecosystem to access mentors (especially those with industry-specific expertise), lawyers, accountants and other specialist support as well as with the entrepreneurial community (which in some cases has been a source of partners and non-executive directors) and participated in networking events, such as Startup Grind. The more successful participants have attracted resources from the wider Scottish entrepreneurial ecosystem and internationally.

For example, the founders of MindMate (now known as CitrusLabs), one of the most successful graduates of the programme, which provides an assistance platform for people affected by dementia, were helped to shape their business idea by the University Enterprise Manager and the Scottish Institute for Enterprise (SIE) regional business adviser. Drawing on the expertise of the University of Glasgow’s Institute of Cardiovascular and Medical Sciences, the team began to translate contemporary research in Dementia care into an actionable, digital platform. The team were encouraged to enter the Young Innovator’s Challenge (YIC), which they went on to win. The YIC Bootcamp helped the team to map out their initial ideas for the venture, with the £5,000

prize money enabling them to launch the business. They received additional finance from winning a number of other enterprise competitions, including Converge Challenge and a Scottish EDGE award, (which provided business support in addition to funding) and were accepted into Ignite, one of the UK's top accelerator programmes. The company then went on to win a place on Techstars NYC in 2016, the first ever Scottish start-up to do so, and in 2018 raised \$2m from various US investors. It now operates from Los Angeles, with only the tech team remaining in Glasgow.<sup>10</sup>

Corien Staels, founder of wheelAIR – who has developed a backrest for wheelchair users to help regulate body temperature – has also won several awards, including the SIE New Ventures competition, an Enterprise Campus Award which provided initial operational expenses, an EDGE award that funded the recruitment of a design team and a further EDGE award and Converge Challenge Design and Creativity Prize providing cash and in-kind business support, enabling the move to the production stage, and a Royal Society of Edinburgh Enterprise Fellowship which provided her with a salary for one year, along with training and mentorship. She has gone on to raise £100,000 of equity funding from private individuals, having previously turned down an offer of funding on TV's Dragon's Den, to expand the design team and take the product to market.<sup>11</sup>

These examples illustrate the point that student start-up programmes and the start-ups that they generate cannot operate in isolation. They need to draw on the wider entrepreneurial ecosystem

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<sup>10</sup> <https://www.sie.ac.uk/wp-content/uploads/2016/07/mindmate-written-study.pdf> ;  
<https://www.insider.co.uk/news/mindmate-dementia-app-glasgow-startup-12271498>

<sup>11</sup> <https://www.sciencescotland.org/feature.php?id=343>



for resources to support their participants during the programme. And even more important, participants need to draw on the wider ecosystem after the programme ends as they develop their business (the ‘accelerator’ stage), to attract support, advice and resources from various organizations and individuals and acquire new skills and knowledge.

#### 4.5. “Success has many fathers, failure is an orphan”.

The implication that arises from successful start-up programme participants drawing support from a wide range of other organisations in the entrepreneurial ecosystem is that many organisations will be able to claim them as their success. This may not be malicious. The role of university start-up programmes in the pre-start-up phase of the business and the largely intangible nature of the support provided means that the university’s role is often not acknowledged, forgotten or simply under-appreciated, even by the programme participants. It is organisations that provide higher profile and more substantive forms of support once the business has gone beyond the pre-start up stage that typically claim the credit for successful businesses. But it may also be a consequence of the unhealthy competition that often exists between entrepreneurial support organisation (ESOs) in entrepreneurial ecosystems which arises from the need to demonstrate impact to secure ongoing government funding – which might be described as an ‘ego’ system. Universities therefore need to be more pro-active in publicising their role in entrepreneurial successes, not least by emphasising that relationships are reciprocal. The businesses that emerge from start-up programmes such as SSCP need to be able to access a range of other support to become successful. But equally, ESOs that support emerging start-ups, for example with finance, need ‘springboard’ organisations such as the SSCP which germinate start-ups that in due course will become their clients. However, evidence from various actors in

the Scottish entrepreneurial ecosystem suggests that they often do not recognise this, viewing the Scottish entrepreneurial pipeline starting with SIE, Converge, EDGE, and the RSE Fellowship and not with universities.

## 5. CONCLUSION

This study demonstrates that university start-up programmes – even a small programme such as the University of Glasgow’s SSCP that is the focus here - have a positive impact on student and graduate start-up activity. There are, of course, challenges in establishing the additionality of such programmes – would participants have started businesses in the absence of the program and would they have achieved the same outcomes? Some startups emerge directly and immediately from the programme, others emerge some time later as participants whose initial venture failed to get off the ground go on to start a second business while others mothball or delay their start up until they have completed their academic studies. The evidence also indicates that start-up programmes have significant intangible benefits for participants that support the start-up process, with impacts on their self-confidence, motivation and entrepreneurial skills and competence. All of this has significant implications for the choice of metrics for such programmes (Gianiodis and Meek, 2019): it is inappropriate to measure the success of such programmes simply in terms of the number of companies started by participants within a specific time period after the end of the programme.

The case study also provides some important insights into the design and operation of university start-up programmes.

First, effective university start-up programmes are much more than simply about providing financial support. Although the finance that participants receive is important, it only constitutes part of a much broader package of support. To be effective, university start-up programmes require to provide participants with one-on-one advice and counselling from both Enterprise Centre staff and external stakeholders and connect them to resources in the external ecosystem. Mentoring is a critical component, having a significant impact on student start-up outcomes (Ahsan et al, 2018). Students entering start-up programmes generally lack the capabilities, confidence and in-depth knowledge of functional business activities necessary to start a new business on their own. Mentors play several roles. They can guide students in acquiring relevant business and technological knowledge to move their venture forward. Equally important is their role in providing psychological support, offering encouragement and reassurance to help inexperienced entrepreneurs to cope with the stresses of running a business, develop self-efficacy and mature emotionally. And they help them to form relationships with the business community (entrepreneurs, business professionals, suppliers, distributors, etc.). All of this support helps students to develop an entrepreneurial identity (Ahsan et al, 2018). The need for extensive one-to-one support, in turn, has implications for the scale of start-up programmes. A key decision for universities is therefore what level of resources they are willing to commit.

Second, there are a number of issues concerning the selection of participants. (i) What progress should potential participants have achieved prior to being selected on to the programme?

Specifically, how well developed should their idea be? What – if any – milestones should they have passed? Participants who are at a very early stage may not derive as much benefit from the programme as those who are further along the start-up process. (ii) How much variability in the

prior experience of the participants can be accommodated in the programme? One of the criticisms of the SSCP was that the diversity of participants on the programme in terms of the stage of development of their business and prior business knowledge created a strain on its 'one size fits all' design. (iii) How much time are participants able to commit to their business at the end of the programme? Specifically, should the programme favour participants who have recently graduated (or have at least one team member who has graduated) rather than ongoing students? However, these considerations have to be balanced by the need to avoid 'picking winners' on the assumption that which ventures will fail and which will succeed can be identified in advance (Hornsby et al, 2018).

Third, student start-up programmes cannot operate in a vacuum. They have to be embedded in a wider university entrepreneurial ecosystem that addresses each of the stages of startup process: inspire – engage – accelerate. Start-up programs focus on the 'engage' stage. Hence they need activities that 'inspire' students to consider entrepreneurship – notably entrepreneurship courses but also extra-curricular activities that provide an initial exposure to the entrepreneurship process - to create a flow of motivated applicants who have some understanding of entrepreneurship and a business idea. This requires that all parts of the university share the common goal of promoting start-ups (Hornsby et al, 2018). However, it is often the case that the decentralized disciplinary silos produce 'turf wars', with various parts of the university seeking to create their own entrepreneurial ecosystems which results in conflicting goals, competition for resources and duplication of effort (Wright et al, 2017; Duruflé et al, 2018; Bischoff et al, 2018). However, any centralized oversight should not be done in such a way that it stifles the organic nature of entrepreneurial activity (Hornsby et al, 2018). Indeed, the SSCP was a bottom-up initiative. It is

equally important to recognize that start-up programmes have to be embedded in the wider local, regional, national and even international entrepreneurial ecosystems to access the resources that enable the ‘acceleration’ of the embryonic start-ups that graduate from the programme. This requires universities to develop mechanisms that enable them to interact with a diversity of institutional and individual stakeholders that can provide these resources (Wright et al, 2017; Bischoff et al, 2018). However, they also need to be alert to the competition between the various ecosystem participants to claim the credit for successful start-ups, manage these competing claims appropriately and publicize their role in the successful start-ups that they have supported.

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